LITTLE RIVER INLET BRIDGE
(North Boundary Channel Bridge)
(Bridge over Boundary Channel)
George Washington Memorial Parkway, spanning Boundary Channel
Washington
District of Columbia

HAER No. DC-39

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 20013-7127

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I. INTRODUCTION

Location: George Washington Memorial Parkway milepost 5.79, 1.7 miles to Interstate 395. Carries GWMP over Boundary Channel, from Columbia Island to Arlington County, Virginia.

FHwA Structure No.: 3300-013P.

Date of Construction: 1963.

Type: Steel girder bridge.

Designer: Bureau of Public Roads (BPR) with approval from the National Park Service. BPR Western Bridge Design Office, San Francisco, CA. provided the structural design; BPR Region 13 provided construction engineering.

Contractor: J.O. and C.M. Stuart, Inc., Bethesda, MD.

Present Owner: National Capital Region, National Park Service.

Present Use: Connects northbound lanes of GWMP near Roosevelt Bridge with Arlington Boulevard and northbound lanes from Memorial Bridge.

Significance: Built as part of plans to extend the GWMP to Great Falls, Virginia.

Project Information: Documentation of the George Washington Memorial Parkway and Clara Barton Parkway was undertaken as a multi-year project by the Historic American Buildings Survey and the Historic American Engineering Record (HABS/HAER), a combined division of the National Park Service, Robert Kapsch, Chief. The project was sponsored by the Park Roads Program of the National Park Service, John Gingles, Deputy Chief, Engineering and Safety Services Division. The Project Supervisor was Sara Amy Leach, HABS Historian. Bridge reports were prepared by Elizabeth M. Nolin (1988); Michael P. Kucher (University of Delaware, 1993); and Jennifer P. Wentzien (University of Washington, 1994).

HABS Report No. VA-69 prepared by Timothy Davis (University of Texas) provides an overview history of the entire parkway project. Jack E. Boucher and Jet Lowe produced the large-format photographs. The Washington-based summer 1994 documentation team was headed by landscape architect Tim Mackey (Harvard University, Graduate School of Design).

II. HISTORY

Little River Inlet Bridge was built in 1964 to carry the northbound GWMP from Arlington Memorial Bridge to the Roosevelt Bridge. The bridge is located in Arlington County, Virginia and Washington D.C. at the north end of Columbia Island.

The architectural design of the bridge can be understood as a hybrid combining the native stone facing of concrete wing walls used on earlier GWMP structures with the exposed structure favored on the northern GWMP bridges. The stone facing continues the tradition of using a mica schist quarried from the nearby Stoneyhurst quarries. The exposed steel is painted "foliage green," satifying both contemporary architectural preferences and engineering requirements for protecting the steel.

Description:
Little River Inlet is a multi-beam steel girder structure supported on reinforced concrete abutments. The overall length including wing walls is 193'. Steel girders span 107'. The roadway is comprised of two 14' wide lanes and 5' wide walkways on both sides. The total width of the reinforced concrete cast in place deck is 38'.

The site is on hydraulic fill and steel piles (10BP42) 16' to 35' long were driven vertically to refusal. Reinforced concrete abutments and wing walls rest on counterfort type (stepped) footings. Work was partially suspended in the winter months due to freeze/thaw of fill. Heaters and vinyl covers were used to protect concrete from cold weather. Four steel girders span between the abutments and support the bridge deck. Diagonal steel struts brace the diaphragm laterally. The girders have a parabolic curve on the bottom flange and vary from 6'-6" deep at the supports to 4'-6" at midspan. Bethlehem Steel Company furnished the steel to the fabricators, Atlas Machine and Iron Works of Gainsville, Virginia. The Naval Inspector in Baltimore performed x-ray inspection of the steel. A-36 steel was used except for A-441 steel for flange plates and girder webs, and A-325 for bolts. Other materials were tested by BPR Laboratories under the direction of M. Bryant, materials engineer. The stone faced wingwalls are by Louis Perna and Sons with stone supplied by Stonehurst Quarry in Potomac, Maryland. Steel railings were fabricated by Atlas Machine and Iron Works of, Inc. of Alexandria, Virginia with steel furnished by the United States Steel Corporation, National Tubing Company of Youngstown, Ohio. The bridge is designed for a standard AASHO H20-44 loading. Final construction costs were $304,910 with an additional $43,801 for engineering.[1]

Alterations
In 1966 steel struts were installed at the foundation level due to horizontal and lateral displacement of the abutments. Each strut is two 36WF150 I-beams with a 1/2" cover plate and varying lengths of stiffener plates. Four 100-ton jacks were used to place the struts. BPR Region 15 Bridge Design Office designed the repair which was approved by E.F. Hoppe, NPS Landscape Architect. Contractor was Williams Enterprise Inc. The repair cost $56,532.[2]

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[1]"Final Construction Report Project 1A26", 1965.

[2]"Final Construction Report Project 1A30", 1966.

III. SOURCES

U.S. Department of Commerce, Bureau of Public Roads. Plans for Proposed Project 1A26, 1A30 (the 1966 repair project). Microfiche reductions of original construction drawings on file at National Capital Region Park Headquarters, National Park Service, Washington D.C.

U.S. Department of Commerce, Bureau of Public Roads. "Final Construction Report, George Washington Memorial Parkway, Project 1A26." Submitted by N. E. Mosbey, Resident Engineer. On deposit at the remote storage facility of the FHWA office in Sterling, Virginia. See also report on alterations, Project 1A30.

U.S. Department of the Interior, Historic American Buildings Survey (HABS), No. VA-69, "George Washington Memorial Parkway," 1994. Prints and Photographs Division, Library of Congress, Washington D.C.